distributed test, and they will be able to communicate with their personnel and coordinate the test from a central location."

He said RTTC is also planning to link through the DREN to the Raytheon plant in Tucson, Ariz., to support future tests.

William Wilkinson, RTTC's lead engineer for the Javelin test program, said this program spurred RTTC in developing some of its laboratory facilities and test tools. These high-tech facilities do not just test the operation of missile sensor guidance and control systems under normal operating conditions, he explained. They also simulate various functional problems so testers can see how the systems respond.

"You can input certain faults to look at how a missile would react in flight," Wilkinson said. "This is done using tactical hardware, not just bread-board components in a lab. We have a system that can introduce a control-actuator problem such as a fin that sticks, and we can simulate the missile going bad in flight. We can then determine what the flight characteristics would be in that case. You can load different types of tracker software into a guidance system and play it against different scenarios without having to do captive-carry flights."

A "captive-carry" flight uses aircraft to carry missiles down range to the target and test their guidance systems, he explained.

Wilkinson first became involved with the Javelin test program during production-verification testing for the initial low-rate production design in 1995, and he has seen the system undergo some improvements and changes that lower production costs. As Raytheon and Lockheed Martin introduced new materials or made alterations to Javelin subsystems, a variety of tests at RTTC helped the program manager determine if these changes affected system performance. RTTC testers also subject systems to a variety of dynamic and climatic environments.

Testing to Extremes

"The Javelin is a fairly robust system because we do some rigorous dynamics tests," Wilkinson explained. "During a qualification test, we drop the bare round from three feet, at various angles, onto reinforced concrete. We also drop it housed in its container, from several different angles. That is all done at different temperatures – extremes you would see in the field."

Dynamics testing for the missile system includes subjecting it to the type of vibration it would experience when transported in a tactical wheeled vehicle, a two-wheel trailer, and a Bradley Fighting Vehicle. RTTC has used data from the field to create simulations on a shaker table. Soon a vibration test that replicates transport in a HMMWV will be introduced, Wilkinson added.

RTTC has upgraded some of its other facilities to improve testing.

Bottom Line – Improved Firing Capability

"Over the past several years, we have improved our firing capability at Test Area 6 with facilities upgrades," Wilkinson said. "The Javelin Environmental Test Set that we built for the program office has become one of our primary instrumentation keys. We are able to do functional tests on rounds in chambers at varying temperatures, varying humidity, etc. We can power up the round and go through some functional tests, while actually looking at a target. We can fire a round with a derivative of this family of test sets.

"We've bought some new dynamic equipment. The [Javelin] program office provided funds for us to complete a dual captive-flight system, providing the capability to compare the performance of two identical guidance systems running two different versions of tracker software during a single captive flight."

Editor's Note: The author welcomes questions or comments on this article. Contact him at *castm@dtc.army.mil.*

Important Notice on Registering for DAU Courses

The DAU Virtual Campus, also known as the Online Schedule System (OSS), no longer serves as a registration system for any DAU course. The Acquisition Training Application System (ACQTAS) will be the sole registration system for all DAU courses. Civilians from DoD agencies other than the Army, Navy, and Air Force can access ACQTAS at the following Web site *https://www.atrrs.army.mil/channels/acqtas*. The OSS will continue, however, to serve as the delivery platform for all Web-based training courses (ACQ 101, BCF 102, CON 237, IRM 101, LOG 101, LOG 203, PQM 101, SAM 101, TST 101) and "A" sections for DAU hybrid courses (ACQ 201, BCF 211, PQM 201).

When a student registers for an online class in ACQTAS, the data entered into ACQTAS for each student (SSN, name, address, organization, etc.) will be the data of record; this data will then be forwarded to OSS. If the student already has an account in OSS, the user name/password for that student will remain the same. If the student does not have an account in OSS, OSS will provide the student with a user name/password he or she can use to enter OSS for the purpose of completing Web-based training courses.

Military and civilian personnel from the Department of the Army and Department of the Navy must continue to register for DAU courses using the prescribed procedures:

Army
https://www.atrrs.army.mil/channels/aitas/

Navy
https://www.register-now.cms.navy.mil

Air Force
For registration procedures, contact the Office of Acquisition Career Management, Acquisition and Career Management Resources Division, Office of the Deputy Assistant Secretary of the Air Force for Management Policy and Program Integration (SAF/AQXDA), at DSN 487-6580.